

ABSTRACT

This invention pertains to a siloxane resin composition comprising $R^1SiO_{3/2}$ siloxane units and $(R^2O)_bSiO_{(4-b)/2}$ siloxane units wherein R^1 is an alkyl group having 1 to 5 carbons; R^2 is a branched alkyl group having 3 to 30 carbons, b is from 1 to 3. The siloxane resin contains a molar ratio of $R^1SiO_{3/2}$ units to $(R^2O)_bSiO_{(4-b)/2}$ units of 1:99 to 99:1. The siloxane resin is useful to make insoluble porous resins and insoluble porous coatings. Heating a substrate coated with the siloxane resin at a sufficient temperature effects removal of the R^2O groups to form an insoluble porous coating having a dielectric constant in the range of 2.1 to 3, a porosity in the range of 2 to 40 volume percent and a modulus in the range of 1.9 to 20 GPa.